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**REMARKS/ARGUMENTS**

This application has been reconsidered carefully in light of the Office Action dated as mailed on 08 December 2005. A careful reconsideration of the application by the Examiner in light of the foregoing amendments and the following remarks is respectfully requested.

5                    This response is timely filed as it is accompanied by an appropriate Petition for Extension of Time for Filing of Response under Rule 1.136(a) and the associated fee.

10                    No additional claim fee is believed due as a result of this Amendment because neither the total number of pending claims nor the number of pending independent claims is believed to exceed the total number and the number of independent claims, respectively, for which fees have previously been paid. If, however, it is determined that such a fee is properly due as a result of this communication, the Commissioner is hereby authorized to charge payment of such fees or credit any overpayment, associated with this communication, to  
15                    Deposit Account 19-3550.

**Amendments to the Specification**

By the above, the passages of the specification at page 2, lines 6-16; page 11, line 9 through page 12, line 11; page 17, lines 3-14; page 18, line 13 through page 19, line 4; page 28, line 20 through page 29, line 2; page 32, lines 6-9; page 32,

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line 10 through page 33, line 2; and page 33, lines 9-13, respectively, have been rewritten to make certain typographical and grammatical changes to the specification.

### **Revised Drawings**

By the attached Replacement Sheet, FIG. 6 has been revised by adding  
5 omitted element 386 and correspondingly appropriately redirecting the lead line for  
element 316.

### **Amendment to the Claims**

By the above,

1. claim 1-31 have been canceled without prejudice and
- 10 2. claims 32-62 have been added to more fully and completely  
claim the disclosed subject matter.

Newly added claims 32-62 find support throughout the originally filed application. For example, claim 32 and 43 are independent claims that find general support throughout the application including page 8, line 17 through page 9, line 19,  
15 for example. Claim 54 is an independent claim that finds general support throughout the application including page 12, line 12 through page 13, line 13, for example.

Claim 32 additionally requires that the gas source material comprise nitrous oxide and that the chamber opener is effective upon actuation of the inflation assembly to open the second chamber and to release at least a portion of the second

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chamber contents including at least a portion of the nitrous oxide into gas flow communication with the diffuser chamber and the at least one gas treatment element disposed therewithin. Such requirements find support through the application such as at page 20, line 4 through page 23, line 2 and page 25, lines 3-21, for example.

5                   Claim 43 additionally requires that the at least one gas treatment element is heated by contact with the first reaction products. Claim 43 further requires that the portion of the second chamber contents released into gas flow communication with the diffuser chamber and the at least one gas treatment element contact the heated treatment element and is heated thereby. Such requirements find support through the application such as at page 9, line 20 through page 10, line 13 and  
10                   page 25, lines 3-21, for example.

                  Claim 54 additionally requires the at least one gas treatment element be in spaced relation with the stored gas chamber. Such positioning is shown in FIGS. 1, 4 and 6 and understood in view of the discussions of the operation of the  
15                   illustrated embodiments, see page 23, line 19 through page 25, line 21; page 31, lines 18-20; and page 35, line 19 through page 36, line 11, for example.

                  Claims 33-42; 44-53 and 55-62 are dependent on claims 32, 43, 54, respectively. These claims also find support throughout the original application. For example, claims 33 and 44 generally parallel original claim 2. Claims 34, 45 and

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55generally parallel original claim 3. Claims 35 and 48 generally parallel original  
claim 6. Claims 36 and 49 generally parallel original claim 7. Claims 37 and 50  
generally parallel original claim 8. Claims 38, 51 and 58 generally parallel original  
claim 9. Claims 39 and 59 generally parallel original claim 10 as rewritten to avoid  
5 possible confusion with regard to statutory class of invention. Claims 40, 52 and 60  
generally parallel original claim 11 as rewritten to avoid possible confusion with  
regard to statutory class of invention. Claims 41 and 61 generally parallel original  
claim 12. Claims 42, 53 and 62 generally parallel original claim 13. Claims 46  
and 56 generally parallel original claim 4. Claims 47 and 57generally parallels  
10 original claim 5.

Claims 32-62 remain in the application.

### **Objections to the Specification**

The disclosure has been objected to because of certain perceived  
“informalities.” By the above, portions of the specification have been rewritten in an  
15 effort to alleviate the Examiner’s concerns therewith. In view thereof, the objections  
to the specification are believed to have been overcome or at least rendered no longer  
appropriate and notification to that effect is solicited.

Should the Examiner, however, identify any additional passages of the  
application requiring modification or correction, the Applicants stand ready to  
20 appropriately make any further required changes.

### **Objections to the Drawings**

In response to the drawings objections, FIG. 6 has been revised by adding omitted element 386 and correspondingly appropriately redirecting the lead line for element 316.

5 In addition, the specification at page 18, line 17 has been rewritten to replace "74" with --76--.

In view thereof, the objections to the drawings are believed overcome and notification to that effect is requested.

### **Claim Rejections - 35 U.S.C. §112**

10 1. Claims 10, 11, 19, 20, 28 and 29 were rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for allegedly failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

### **Claim Rejections - 35 U.S.C. §102(e)**

15 1. Claims 1, 2, 6-8, 10, 12, 14, 19, 21, 23, 28 and 30 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent 6,908,105 B2 to Yamazaki et al. (hereinafter "Yamazaki").

### **Claim Rejections - 35 U.S.C. §103**

20 1. Claims 12, 22 and 31 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yamazaki.

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2. Claims 3-5, 11, 15-17, 20, 24-26 and 29 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yamazaki in view of U.S. Patent 6,244,623 B1 to Moore et al. (hereinafter "Moore").
3. Claims 9, 18 and 27 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yamazaki in view of U.S. Patent 5,788,270 to Haland et al. (hereinafter "Haland").

### **RESPONSE/REMARKS TO PRIOR ART REJECTIONS**

In view of the above cancellation of claims 1-31, the subject prior art rejections of claims 1-31 are moot.

#### **Newly Added Claims**

Claims 32-61 have been added and remain pending herein.

Claims 32 and 43 are independent claims with claims 33-42 and 44-53, respectively, dependent thereon. Claims 32 and 43 are each directed to an inflation assembly effective for supplying a quantity of inflation gas to at least one associated inflatable restraint device. These claims require the respective inflation assembly include a first chamber that contains a supply of a first reactant material effective, upon reaction, to produce first reaction products at least including a quantity of gas and a quantity of heat. The inflation assembly also includes a first initiator in reaction initiating discharge communication with at least a portion of the supply of the first

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reactant material contained within the first chamber. The first initiator is effective upon actuation to initiate reaction of at least a portion of the supply of the first reactant material contained within the first chamber. The inflation assembly further includes a diffuser chamber having a first end and a second end. The diffuser chamber is in gas flow communication through the first end with the first chamber upon actuation of the first initiator. The diffuser chamber is effective to discharge gas into the at least one associated inflatable restraint device.

The inflation assembly also includes at least one gas treatment element at least in part disposed within the diffuser chamber. The at least one gas treatment element is effective for treating gas being discharged into the at least one associated inflatable restraint device. The inflation assembly still further includes a second chamber having contents including a supply of gas source material. The second chamber is closed in a static state with the supply of the at least one gas source material compressed therewithin. The second chamber is openable upon actuation thereof whereby at least a portion of the second chamber contents are in gas flow communication through the second end with the diffuser chamber and the at least one gas treatment element disposed therewithin.

Claim 32 additionally requires that the gas source material comprise nitrous oxide and that the chamber opener is effective upon actuation of the inflation assembly to open the second chamber and to release at least a portion of the second

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chamber contents including at least a portion of the nitrous oxide into gas flow communication with the diffuser chamber and the at least one gas treatment element disposed therewithin.

5 Claim 43 additionally requires that the at least one gas treatment element is heated by contact with the first reaction products. Claim 43 further requires that the portion of the second chamber contents released into gas flow communication with the diffuser chamber and the at least one gas treatment element contact the heated treatment element and is heated thereby.

10 Such inflation assemblies are not shown or suggested by the prior art and thus these claims and the claims dependent on them are believed to be patentable over the prior art of record.

15 For example, while certain of the originally filed claims which required a gas source material comprising nitrous oxide were rejected based on a combination of Yamazaki and Moore, it is respectfully submitted that claim 32 and the claims dependent thereon are patentable over such proposed combination of documents. More specifically, while the Action alleges that it would have been obvious to modify Yamazaki to include nitrous oxide and an inert gas as taught by Moore "in order [to] use a safe thermally stable material and supplement the gas produced or formed upon dissociation", one of the reasons the subject invention employs nitrous oxide is that



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the nitrous oxide itself desirably dissociates to form products of dissociation having an increased molar content such as may desirably enhance the inflation process as applied to an associated inflatable restraint device.

Moreover, while the Action alleges that it would have been obvious to  
5 modify Yamazaki to include nitrous oxide and an inert gas as taught by Moore, it is respectfully submitted that the Action does not identify or provide a proper basis for the proposed combination or modification of references. There does not appear to be any disclosure in either Yamazaki or Moore showing or suggesting the proposed combination. Rather, the sole motivation for the proposed combination would appear  
10 to be Applicants' disclosure. For example, while Yamazaki discloses the inclusion of a pressurized medium (e.g., a liquified gas such as CO<sub>2</sub>) within the gas generator thereof [see column 7, lines 49-63 and column 11, lines 23-39, for example], Yamazaki nowhere shows or suggests that such material itself undergoes dissociation to form or produce additional gaseous products.

15 Regarding the proposed motivation of "thermal stability," it is respectfully submitted that Yamazaki has already addressed any concern for "thermal stability" by using an inert pressurized medium. Regarding the proposed motivation to supplement the produced gas, it is respectfully submitted that Yamazaki specifically teaches that the gas generator thereof includes a second gas generating  
20 chamber [40]. [See column 9, line 48 through column 11, line 64, for example.]

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Thus, it is respectfully submitted that there has been no proper showing for the proposed combination of Yamazaki and Moore such as to render the claimed invention unpatentable.

Furthermore, while the Action alleges that with regard to certain of the originally filed claims that the contents of the Yamazaki chamber 14 would “contact a heated element 35”, independent claim 43 not only requires that contents of the second chamber contact the heated treatment element but that they are also heated thereby. Such an inflation assembly is not shown or suggest by Yamazaki which discloses that the charged liquified gas within the chamber 14 thereof is “immediately gasified by a temperature increased due to inflow of combustion gas having a high temperature into the liquified gas charged space 14 and a rapid pressure-reduction in the pressurized medium accommodating chamber 14 due to rupturing of the first rupturable plate.” [See Yamazaki, column 11, lines 23-28.]

In view of such specific and express disclosure, it is respectfully submitted that an inflation assembly such as provided by independent claim 43, which not only requires that contents of the second chamber contact the heated treatment element but that they are also heated thereby, is not shown or suggested by Yamazaki alone or in combination.

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Claim 54 is also an independent claim with claims 55-62, respectively, dependent thereon. Claim 54 is directed to an assembly for supplying inflation gas to an inflatable restraint device. Claim 54 requires the assembly includes a diffuser chamber having at least one discharge opening effective to discharge gas into the inflatable restraint device. The diffuser chamber has first and second ends with a pyrotechnic inflator device disposed at the first end and a stored gas chamber disposed at the second end. The pyrotechnic inflator device includes a first chamber containing supply of at least one pyrotechnic gas generant material effective, upon reaction, to produce first reaction products at least including a quantity of gas and a quantity of heat. The pyrotechnic inflator device also includes an initiator in reaction initiating discharge communication with at least a portion of the supply of the at least one pyrotechnic gas generant material contained within the first chamber. The first initiator is effective upon actuation to initiate reaction of at least a portion of the supply of the at least one pyrotechnic gas generant material contained within the first chamber. The stored gas chamber, in a static state, has contents including a supply of at least one stored compressed gas. The assembly also includes at least one gas treatment element in spaced relation with the stored gas chamber and at least in part disposed within the diffuser chamber and effective for treating gas being discharged into the inflatable restraint device. The assembly further includes a chamber opener at least in part disposed between the at least one gas treatment element and the stored

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gas chamber. The chamber opener is effective upon actuation of the inflation assembly to open the second chamber and to release at least a portion of the stored gas chamber contents into gas flow communication with the diffuser chamber and the at least one gas treatment element disposed therewithin.

5                   Independent claim 54 is directed to an assembly that includes at least one gas treatment element in spaced relation with the stored gas chamber and at least in part disposed within the diffuser chamber and effective for treating gas being discharged into the inflatable restraint device. The assembly further includes a chamber opener at least in part disposed between the at least one gas treatment  
10                   element and the stored gas chamber.

It is respectfully submitted that such assemblies are neither shown nor suggested by Yamazaki, alone or in combination with the other cited documents. For example, Yamazaki specifically discloses:

15                   The annular supporting member 35 is fixed by making an annular base portion 66 of the central cylinder 60 **abut against** an end surface of the gas generator housing 12 and making the annular bent portion 62 press against an inner surface of the diffuser portion housing 31. [Column 8, lines 34-39, emphasis added.]

Thus, such an annular support member is clearly not in spaced relation with the stored  
20                   gas chamber and at least in part disposed within the diffuser chamber, as required by independent claim 54. Moreover, apart from Applicants' disclosure there would appear to be no prior art motivation or suggestion to so space such components.

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Independent claim 54 also requires that the chamber opener at least in part be disposed between the at least one gas treatment element and the stored gas chamber. Clearly, Yamazaki teaches:

5 a ball-like rupturing means 34 provided with a spherical projecting portion is used, and it is supported and fixed by an annular supporting member 35. [Column 8, lines 21-23.]

Clearly, the rupturing means 34 of Yamazaki is not disposed between the annular supporting member 35 and the chamber 14 as the annular support member is disclosed  
10 as abutting against the housing 12.

#### **DEPENDENT CLAIMS**

Claims 33-42, 44-53 and 55-62 are dependent on claims 32, 43 and 54, respectively and are believed to be patentable at least for the reasons discussed above with regard to the patentability of the respective underlying independent claims.

15 In addition, these claims are believed to include additional limitations which further patentably distinguish the claimed invention from the prior art.

For example, claims 42, 53 and 62 each require that the first chamber and the second chamber of the subject inflation assemblies be adjacently disposed side-by-side. As disclosed in the application, the side-by-side placement of the hot  
20 gas-producing chamber 330 and the cold gas-supplying chamber 316 in the inflation assembly 310 can advantageously result in improved or increased use of the gas

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treatment element 376 disposed within the diffuser chamber 366. [See page 35, line 19 through page 36, line 11, for example.]

While the Office Action recognizes that Yamazaki discloses that the chambers 14, 20 and 30 thereof are longitudinally aligned, the Action contends disposing Yamazaki's chambers side by side instead of longitudinally "would be an obvious matter of design choice." It is respectfully submitted that such contention ignores the express teachings of Yamazaki and is contrary to the teachings of Yamazaki. For example, Yamazaki discloses that:

since the ball-like rupturing means 34 and the gas ejecting port 23 are provided to face each other and both are formed at positions on the axial center of the gas generator housing 12, a portion which the leaped ball-like rupturing means 34 strikes (namely, the hitting portion) can be specified easily, and positions of the second opening 50 and the second rupturing plate 51 can be selected easily. [Column 10, lines 31-38.]

The Action has failed to identify or provide any motivation for having the first chamber and the second chamber of the subject inflation assemblies be adjacently disposed side-by-side, as claimed. In view thereof, these claims are believed to be further patentable over the prior art of record.

Claims 39 and 59 each further requires that the at least one gas treatment element is heated by contact with the first reaction products and wherein the portion of the second chamber contents released into gas flow communication with the diffuser chamber and the at least one gas treatment element contact the heated treatment element. Claims 40 and 60 each further requires at least a portion of the

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nitrous oxide/gas source material contacting the heated treatment element dissociates to form dissociation products having a second molar content, where the second molar content is greater than the first molar content.

As discussed above relative to independent claim 43, such inflation assemblies are not shown or suggested by the prior art.

Claims 46 and 56 each further requires the at least one gas source material comprises nitrous oxide. Claims 47 and 57 each further requires the at least one gas source material comprises nitrous oxide and at least one inert gas.

As discussed above relative to independent claim 32, such inflation assemblies are not shown or suggested by the prior art.

### Conclusion

In view of the above, all pending claims are believed to be in condition for allowance and notification to that effect is solicited. However, should the Examiner detect any remaining issue or have any question, the Examiner is kindly requested to contact the undersigned, preferably by telephone, in an effort to expedite examination of the application.

Respectfully submitted,



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**Amendments to the Drawings:**

The attached sheet of drawings includes changes to FIG. 6. This sheet replaces the original sheet that included FIG. 6. In FIG. 6, previously omitted element 386 has been added and the lead line for element 316 has been appropriately, correspondingly redirected.

Attachment: Replacement Sheet